A STUDY OF TEACHERS' RESPONSES TO PROBLEM SITUATIONS IN SCHOOL AS REPORTED BY TEACHERS AND STUDENTS[1]

GRACE BELDEN COX, CM.A.
Child Study Service, Davenport Public Schools, Davenport, Iowa
AND
HAROLD H. ANDERSON, Ph.D.
University of Illinois, Urbana

THE construction and validation of a mental hygiene scale for teachers has previously been reported by Anderson (1). In that scale mental hygiene score values were assigned to certain techniques teachers employ in dealing with problem situations at the high school level. Twenty-three problem situations which occur in school were selected. For each problem situation a number of currently reported teachers' techniques were listed. On the basis of specified definitions and assumptions, judges validated each technique for each of the twenty-three problem situations. The judges rated each technique for its mental hygiene value on a scale of seven points.

The present study was planned and executed in conjunction with the construction and validation of the mental hygiene scale for teachers. The same twenty-three problem situations and the same reported teachers' techniques have been used. Teachers and students reported on specially devised ballots. The objectives were to determine the reliability with which teachers and students would mark their respective ballots, and to analyze the reports of teachers and students in a large high school.

It should be pointed out that the mental hygiene score values in only eleven of the twenty-three problem situations have been published (1), the scores in the other problem situations not being sufficiently well-spaced to constitute a satisfactory "scale." However, each of the techniques reported in this study has been validated (1, p. 255), and the mental hygiene scores used.

MENTAL HYGIENE SCORES OF TEACHERS OBTAINED FROM TEACHERS' BALLOTS

The teacher's ballot consisted of five mimeographed pages, on four of which were listed the twenty-three problem situations. For each problem situation a selected number of teachers' techniques were given. Space was also provided under each situation so that a teacher might list, if he chose, as many as three additional techniques not contained in the mimeographed list. The techniques which the teachers wrote into their ballots were added to the list which was furnished the judges for assigning of mental hygiene score values. Thus the entire list of techniques contained some which were reported directly by the teachers used in this study.

The face sheet of the teacher's ballot is reproduced here. The statement, "Do not sign this Ballot," was mimeographed into the space ostensibly provided for the name of the teacher. For purposes of this study, however, a code system was

---

[1] This report is based on a master's thesis submitted by Grace Belden Cox to the Graduate School of the University of Illinois, 1939 (2).

Teacher's Ballot

Male ______________

Name (Do not sign this Ballot) Female______________ Date______________

School in which you teach____________________ City______________ State______________

Approximate number of children with whom you have daily contact:

Boys______________ Girls______________ Total______________

Department in which you teach____

How many years have you taught?____

Purpose

This ballot aims to get an index of the treatment you would customarily apply to each of the problems listed below.

Directions

For each problem listed below mark 1, 2, and 3 opposite the three treatments you would prefer to use first, second, and third respectively.

If you would prefer to use some treatment other than those listed please write a brief description of it and mark whether it is 1, 2, or 3. You may write on the blank lines provided for the three additional items if you wish.

devised for identifying the ballots. Academic degrees and sex of teachers were obtained from school records.

Subjects. The study was made in a high school in a town of approximately 75,000 population. Two hundred teachers' ballots were distributed; this number comprised practically the entire high school teaching staff, including athletic coaches and music directors. Of the 200 ballots, 130 were returned. For purposes of determining the reliability of the reports on the ballots, a second group of ballots was distributed at the end of the week to the first hundred teachers who had returned the first ballot. Of these, 53 ballots were returned, each identified by the code symbols. Each of the fifty-three teachers was a personal friend of the experimenter; each knew that the ballots were to be used in research for a thesis. The teachers who marked the two ballots are designated the "reliability group"; those who marked one ballot only are designated the "regular group." Table 1 gives a distribution of 130 teachers according to department, academic degrees, sex, and years' teaching experience.

Method of scoring. Only the first responses of the teachers have been used in computing scores. With few exceptions, all ballots indicated first, second, and third preferences of teachers' techniques. There was evidence that the teachers marked the ballots seriously; the fact of a large number of ballots with the choices in nonconsecutive order indicated that in all probability those teachers had read down and up the list for each problem situation. Also, the fact of a considerable number of techniques written in by the teachers was evidence that they had made an effort to express their preferences. These facts may be regarded as important, for it was anticipated that by asking for three responses, it would tend to evoke a more carefully considered response. A teacher's mental hygiene score is the mean score for the twenty-three situations on a given ballot.

TABLE 1

	Reliability group	*Regular group*	*Total*
Department			
Academic	28	58	78
Industrial arts & commerce	19	17	36
Fine arts	6	8	14
No information	—	2	2
Total	53	77	130
Academic degrees			
M.A.	17	23	40
B.A.	18	30	48
B.S.	6	6	12
B.E.	8	9	17
None	4	7	11
No information	—	2	2
Total	53	77	130
Sex			
Male	18	32	50
Female	35	45	80
Total	53	77	130
Years' experience			
1– 9	6	16	22
10–19	34	39	73
20–29	9	19	28
30–39	3	2	5
40–49	1	1	2
Total	53	77	130

Reliability of teachers. Fifty-three teachers marked ballots twice. For each ballot a mean score for the twenty-three situations was computed. The scores on the first ballots were then correlated with the respective scores on the second ballots, yielding a reliability coefficient of .81.

Distribution of mental hygiene scores. For each of the teachers' ballots marked by 130 teachers the mental hygiene score was computed. The mean score was 3.1, and the standard deviation was 0.6. Distribution was fairly symmetrical, with a range of 1.6 to 4.5 practically equidistant above and below the mean, and with the mean and the mode coinciding. The position of the distribution curve on the lower half of the seven-point mental hygiene scale indicates that, according to the mental hygiene scores, the techniques reported by teachers were either generally unrelated to the problems, or they actually increased the conflict of differences between student and teachers. With a possible range extending to 7.0, the highest mental hygiene score was 4.5.

Relation of mental hygiene scores to academic degrees. Table 2 gives a tabulation of the mental hygiene scores of 130 teachers' ballots according to group intervals of 0.5 for the total number of teachers and for subdivisions of teachers according to academic degree.

TABLE 2

Mental Hygiene Scores from 130 Teachers' Ballots

Score	*Master's degree*	*Bachelor's degree*	*No degree*	*Total*
1.5—1.9	0	3	1	4
2.0—2.4	4	5	4	13
2.5—2.9	8	20	2	30
3.0—3.4	9	35	3	49*
3.5—3.9	9	12	0	21
4.0—4.4	10	1	1	12
4.5—5.0	1	0	0	1
Total	40	77	11	130
Mean score	4.3	3.0	2.7	3.1
S. D.	.63	.24	.72	.60

* Two teachers in this score interval failed to give information concerning degrees.

The mean scores and standard deviations indicate a tendency for mental hygiene scores to increase with academic training as represented by academic degrees. Although the teachers having no degree represented a smaller number, their mental hygiene scores tended to be lower than the scores for teachers possessing a bachelor's or a master's degree. One outstanding teacher with no degree had a mental hygiene score of 4.2; he fell in the class interval which contained one-fourth of the teachers who had obtained master's degrees.

The data on which Table 2 is based were analyzed to determine the significance of differences between mean mental hygiene scores of teachers grouped according to academic degrees. The comparison of these means is shown as a part of Table 3, where it can be seen that the differences in mental hygiene scores between those having a master's degree and those having either a bachelor's degree or no degree are both statistically significant. Those having a bachelor's degree were seen in Table 2 to have a higher mean score than those having no degree. Table 3 shows 92 chances in 100 that the obtained difference represented a true difference greater than zero.

Sex of teachers. Teachers' ballots were received from fifty men and eighty women. The difference in mean scores of these two groups was very small, with only 86 chances in 100 that the obtained superior mean score for women represented a true difference greater than zero.

Department. Among the 130 teachers marking the teachers' ballots, seventy-eight were in the academic department, thirty-six in industrial arts, and fourteen in fine arts. Two failed to give information as to their departments. Table 3 shows that teachers in the academic department had a mean mental hygiene score superior to those in the industrial arts. Though this difference was not great, there were 97 chances in 100 that the obtained difference represented a true difference greater than zero. This difference, which approached significance, was consistent with the significant differences reported above, showing the superior scores of teachers having master's degrees. Most of the teachers having master's degrees were in the academic department, while most of those with no degrees were teaching industrial arts.

TABLE 3

Mean Mental Hygiene Scores, Standard Deviation of the Means, Standard Errors of the Mean, Standard Errors of the Differences, and Critical Ratios for Comparison of Teachers According to Academic Degree, Sex, and Department Taught

Group	*Number*	*Mean*	*S. D.*	*S. E. of mean*
Sex				
Male	50	3.03	.67	.09
Female	80	3.16	.56	.06
Academic degree				
M.A.	40	4.34	.63	.10
B.A.	77	3.01	.24	.02
No degree	11	2.70	.72	.22
No information	2			
Department taught				
Academic	70	3.18	.59	.06
Industrial arts	36	2.93	.75	.12
Fine arts	14	3.07	.44	.13
No information	2			

Groups compared	*Obtained difference*	*S. E. of difference*	*Critical ratio*	*Chances in 100*
Women* —Men	.13	.11	1.1	86
M.A. —B.A.	1.33	.10	13.3	100
M.A. —No degree	1.64	.24	6.8	100
B.A. —No degree	.31	.22	1.4	92
Academic—Ind. arts	.25	.13	1.9	97
Fine arts—Ind. arts	.14	.18	.8	79
Academic—Fine arts	.11	.14	.8	79

* The group having the higher mean score is given first.

As a purely qualitative observation, it may be stated that the teachers reported that a "rougher" class of boys and girls took industrial arts and more repressive measures were used in dealing with them than with students in the academic subjects. It should be pointed out that this study offers no data bearing on the questions whether or to what extent this alleged roughness may exist or, if so, whether it may be a cause or a result of the techniques of human relations which the children found in their teachers. The presumption from other studies showing the dynamic effects on others of domination in its various forms of the use of force, threats, ridicule, or sarcasm is that lower mental hygiene scores in the industrial arts teachers were not due to any inherent qualities of the students in these particular classes.

The differences in mental hygiene scores between the academic group and the fine arts group, on the one hand, and between the fine arts teachers and the industrial arts teachers, on the other, were small and did not approach significance.

Years of teaching experience. Table 1 showed the 130 teachers grouped in class intervals of ten years for length of teaching experience. Over half of the total number of teachers fell within the range of ten to nineteen years. The actual numbers of years of experience were correlated with mental hygiene scores, yielding a coefficient of −.21. The coefficient is so low as to indicate little or no relationship. From the negative sign of the coefficient, however, it can be said that certainly a greater number of years of teaching experience did not tend to raise the mental hygiene score.

Analysis of mental hygiene scores according to each of the twenty-three problem situations. The individual mental hygiene scores for all the teachers for each problem situation separately were assembled to yield a mean mental hygiene score for each problem situation. Figure 1 shows the rank order of problem situations according to mean mental hygiene scores of the 130 teachers.

The midpoint on the mental hygiene scale is 3.5. A score value of 3.5 indicates that the technique receiving this value was unrelated to the problem, that what the teacher did neither intensified nor reduced the conflict between the child and his environment. Scores below 3.5 indicate degrees to which the teacher's techniques tend to intensify the conflict of differences between the child and his environment. Scores above 3.5 indicate degrees to which the teacher's techniques reduce the conflict or tension between the child and his environment, or promote the discovery of common purpose between the child and those about him.

It was shown above that the mean score for all teachers for all problem situations was 3.1, which is below the midpoint of the mental hygiene scale. Of the five problems at the center of the rank order in Figure 1, four had mean score values of 3.1 and the fifth had the score value of 3.0. These problems were: theft, tardiness, truancy, indecent conduct, and cheating. The score values of the techniques used by these teachers in dealing with these five problems indicate that in general the treatment was unrelated to the problem.

Nine situations fell above these five and nine fell below in the mental hygiene rank order.

"Shyness," with a mental hygiene score value of 5.0, was unmistakably at the top of the rank order. Wickman (4) found that 511 teachers regarded shyness as least in rank order of seriousness among a list of fifty behavior and personality problems encountered in school. Thirty clinicians in Wickman's study, however, rated shyness as tying with stealing for thirteenth place in the rank order of seriousness (pp. 124–125).

The prefect negative relation of shyness in Wickman's Chart XVI (4, p. 124) and in Figure 1 in the present study raises a question as to interpretation of this reversal. Presumably the high mental hygiene scores of the high school teachers in dealing with shyness mean that these teachers have used techniques which would meet the "approval" of practical clinicians. But one may ask what this high mental hygiene score would indicate if these same teachers, like Wickman's, had ranked shyness as of least importance. This study offers no data leading to an answer. The question may be raised mainly as stating a problem for further re-

Situation Number	Name	Mean
13	Shyness	5.0
1	Lack of interest	4.1
4	Disobeying regulations due to thoughtlessness	4.0
11	Inattention.	3.8
7	Overzealous in recitation	3.7
8	Physical laziness	3.5
15	Quarrelsomeness	3.5
12	Daydreaming	3.3
18	Poor work for lack of effort	3.2
19	Theft	3.1
3	Tardiness	3.1
21	Truancy	3.1
22	Indecent conduct	3.1
17	Cheating	3.0
20	Lying or untruthfulness	2.9
14	Whispering	2.5
23.	Destruction of property	2.5
2	Bullying or cruelty	2.4
5	Forging signatures	2.3
6	Open rebellion	1.9
9	Rudeness	1.9
10	Defiant	1.9
16.	"Show-off" attitude	1.7

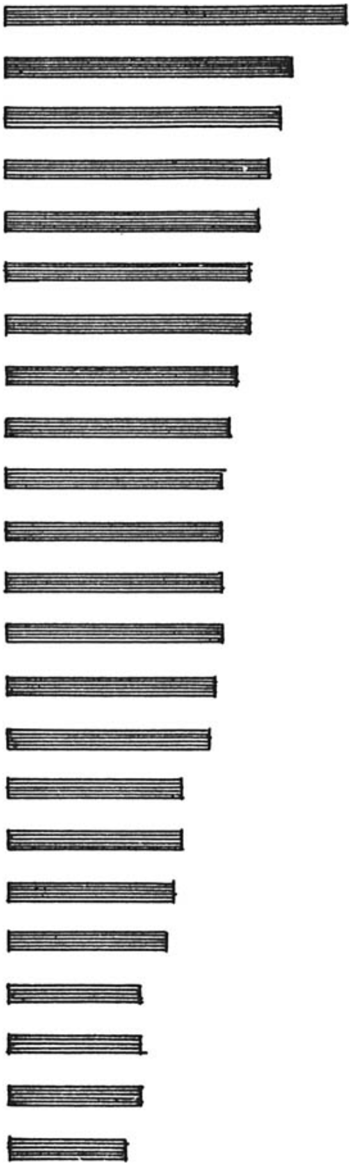


FIGURE 1. Rank order of mean mental hygiene scores of 130 teachers for twenty-three problem situations.

search: whether one could find a consistent negative relation between the mental hygiene value of teachers' techniques and the teachers' own evaluation of the problem as to its seriousness. Stated another way, do teachers use techniques of low mental hygiene value in dealing with those problems which they regard as most "serious"?

In Table 4 is listed in the same rank order the problems contained in Figure 1 and opposite each problem a corresponding problem reported by Wickman, together with its rank order of seriousness as reported by 511 teachers for fifty problems.

TABLE 4

Comparison of Mental Hygiene Scores for Problem Situations with Rank Order of Seriousness of the Problem as Reported to Wickman by 511 Teachers

Problem situation	*Mental hygiene score*	*Rank order*	*Wickman's rank order of seriousness*	*Wickman's problem situations*
Shyness	5.0	1	50	Shyness
Lack of interest	4.1	2	14	Lack of interest in work
Disobeying regulations due to thoughtlessness	4.0	3	11	Disobedience
			38	Thoughtlessness
Inattention	3.8	4	26	Inattention
Overzealous in recitation	3.7	5	43	Interrupting
Physical laziness	3.5	6	17	Laziness
Quarrelsomeness	3.5	7	27	Quarrelsomeness
Daydreaming	3.3	8	41	Dreaminess
Poor work due to lack of effort	3.2	9	—	
Theft	3.1	10	2	Stealing
Tardiness	3.1	11	30	Tardiness
Truancy	3.1	12	6	Truancy
Indecent conduct	3.1	13	4	Obscene notes, talk
Cheating	3.0	14	9	Cheating
Lying or untruthfulness	2.9	15	5	Untruthfulness
Whispering	2.5	16	47	Whispering
Destruction of property	2.5	17	10	Destroying school materials
Bullying, cruelty	2.4	18	8	Cruelty, bullying
Forging signatures	2.3	19	9	Cheating
Open rebellion	1.9	20	7	Impertinence, defiance
Rudeness	1.9	21	16	Impudence, rudeness
Defiance	1.9	22	7	Impertinence, defiance
"Show-off" attitude	1.7	23	39	Attracting attention
Total number		23	50	

In Table 4 rank orders of twenty-three problems in this study are compared with rank orders of identical or corresponding problems selected from a list of fifty in Wickman's Chart XVI.

The median of the mental hygiene rank order is 12 and of Wickman's rank order of seriousness is 25.5. From Table 4 it may be seen that of the eight problems highest in mental hygiene rank order, seven have corresponding rank orders of seriousness at least three times their mental hygiene rank order numbers on a series only twice as long. Five of these eight problems have rank orders of seriousness greater than 25.5, that is, below the median of the series. On the other hand, of the eight problems lowest in mental hygiene rank order, six have corresponding rank orders of seriousness above the median of the series.

With one exception, tardiness, the corresponding problems which Wickman's teachers rated as most serious (stealing, truancy, obscene notes and talk, cheating, untruthfulness) all having rank orders of seriousness of ninth or above, are to be found at the midpoint both of the mental hygiene scale and of the range of mental hygiene scores for the 130 teachers in this study.

In other words, five of the eight problems showing highest mental hygiene value for the teachers' techniques were below the Wickman median in seriousness. Five of Wickman's ten most serious problems were dealt with by the teachers in this study by techniques that were generally unrelated to the problem. Six of the eight problems reported to receive the worst mental hygiene treatment were above the median in seriousness according to the Wickman study.

Mental Hygiene Scores of Teachers Obtained from the Students' Ballots

Materials used in this part of the study were a Student's Ballot and the Bernreuter Personality Inventory.

The student's ballot used in this study was also designed to utilize the mental hygiene scores for teachers' techniques which were developed in the study reported by Anderson. These mental hygiene values make it possible to compare a teacher's mental hygiene score obtained from a teacher's ballot which he has himself marked with the mental hygiene score which may be obtained from similar ballots marked by his students.

The student's ballot consisted of five mimeographed pages, four of which listed the identical twenty-three problem situations presented to the teachers. For each problem situation the same list of teachers' techniques was given. Space was also provided under each situation so that students might list, if they chose, as many as three additional techniques not contained in the mimeographed list but which they believed this particular teacher might use.

The face sheet of the student's ballot used in this investigation is reproduced here. Mimeographed into the space provided for the name of the student was the statement, "Do not sign this Ballot." For this study, however, a code system was devised for identifying the ballots.

Procedure. The students' ballots were first marked on Monday of the last week in May by one hundred students. For the purpose of determining the reliability of students' ratings of teachers' techniques, a second group of ballots was administered to the same students on Thursday morning of the same week. These students were known as the "reliability group." On Friday of that week an additional one hundred students, following the same procedure as the "reliability group," marked students' ballots for the same teachers and in addition marked a Bernreuter Personality Inventory.

In administering the student's ballot, the "Purpose and Procedure" section of the ballot was read to the class. The list of eight teachers was read to the students. Each student then recorded on the face sheet of his ballot the number of the teacher whom he had chosen. Once again the experimenter reminded the students to "keep in mind this one teacher as you mark the ballot."

Student's Ballot

Male ______ White ______

Name (Do not sign this ballot) Female______ Colored______ Age______

Classification (year)______ Major______

Name of school______ City______ State______

Purpose and Procedure

This ballot is part of a study of the methods used by teachers in dealing with certain problems. Most students are rather good observers of such procedures. On the inside of this ballot are listed a number of problems together with statements of different kinds of methods occasionally employed by teachers.

The persons conducting this study are not concerned with the identification of any student or any teacher. You are in fact asked not to sign this blank. It is necessary, however, for students marking this ballot to have some particular teacher in mind.

Names of teachers have therefore been chosen by lot.

Because in large schools certain students might not have had classes with the teacher whose name has been drawn, a list of several teachers has been furnished the person who will administer this ballot.

In marking the ballot will you keep in mind the teacher first named, if you have had a class with this teacher. If you have not had a class with the teacher whose name was drawn first, will you think of the next teacher on the list whom you know well.

The number of the teacher whose methods you are voting on is No. ______. (Please indicate the teacher by number rather than by name.)

For each problem will you mark as 1, 2, and 3 those methods which you feel this teacher would use as first, second, and third choices respectively in dealing generally with this particular problem.

It is of no interest here whether any of the methods listed may be regarded as good or bad. This ballot should indicate merely which methods this teacher would ordinarily use.

If you feel that this teacher would use some other method than those listed you may write in a brief description of one, two, or even three additional methods. In which case will you mark them also as 1, 2, or 3.

Please mark the ballot as accurately as you can.

Subjects. The students were all freshmen in one high school building. In this school, the grade was subdivided into first and second semesters.

The course these students followed might be college preparatory, industrial arts, fine arts, or commercial. College preparatory included such subjects as are required for college entrance. Industrial arts included mainly shop, agriculture, and mechanical drawing. The fine arts courses were offered in music, art, or design, while the commercial course emphasized commercial geography and industrial history and gave routine commercial subjects.

When the students entered high school, the English department segregated them in classes on the basis of the combined ratings on the Ingles Vocabulary Test, Iowa Silent Reading Test for High Schools and Colleges, Iowa Language

Usage Test, and the Literature Test from the Stanford Achievement Test. Those rating sufficiently high on the tests were placed in a group known as the A-B division, another group was known as the C division, and those rating lowest were grouped in a C-D division. Samplings from all divisions were included among the one hundred students known as the "reliability group." In the reliability group, second-semester freshmen only were used.

TABLE 5

	Reliability group	*Bernreuter group*	*Total*
Sex			
Boys	47	53	100
Girls	43	39	82
Total	90	92	182
Course			
College prep.	76	46	122
Ind. arts & comm.	14	46	60
Total	90	92	182
Division			
A–B	31	25	56
C	25	36	61
C–D	34	31	65
Total	90	92	182
Grade in school			
9^1	0	32	32
9^2	90	60	150
Total	90	92	182
Teacher rated			
Number 1	22	20	42
2	14	17	31
3	30	3	33
4	6	6	12
5	4	8	12
6	10	13	23
7	3	21	24
8	1	4	5
Total	90	92	182

Table 5 lists the numbers of students according to grade, sex, division, major, and teacher rated. Out of the one hundred student ballots included in the "reliability group," ninety ballots were complete. The total number of Bernreuter Personality Inventories that were satisfactorily marked was eighty-three.

Among the white students were two Negro boys taking the Bernreuter Personality Inventory. There was considerable evidence that the individual differences among the white students greatly exceeded any measurable differences between these two Negro boys and the rest of the group, and so their ballots were included in the study.

Method of scoring. In scoring the student ballots, the same method was used as in scoring the teacher ballots. Only one technique for each problem situation was scored, the technique marked as the one which the teacher would ordinarily use first.

Reliability of students. Ninety students in the "reliability group" marked the ballots twice. The mean scores on the first ballots were then correlated with the mean scores on the second ballots, yielding a coefficient of reliability of .67.

Teachers rated by students. In administering of student ballots, only eight teachers were included on the list submitted to students for rating. Contrary to the statement on the student ballot that teachers were chosen at random, this group of eight teachers was chosen by the experimenter because it was expected they would be known to students in all groups of freshmen and because they would include a sampling of the teaching staff as to sex, training, and department as shown in Table 6.

TABLE 6

Tabulation of Information Regarding the Eight Teachers Which the Student Elected to Rate

No.	*Sex*	*Academic degree*	*Dept.*	*Yrs. experience*	*Students enrolled*	*Number of student ballots* *Boys*	*Girls*	*Total*
1	M	—	Ind. Arts	22	110	40	2	42
2	F	B.A.	Comm.	12	116	13	18	31
3	F	B.A.	Academ.	25	136	12	21	33
4	M	M.A.	Academ.	4	120	3	9	12
5	F	M.A.	Academ.	12	130	3	9	12
6	F	M.A.	Academ.	2	120	4	19	23
7	M	B.E.	Comm.	11	165	7	17	24
8	M	B.A.	Ind. Arts	9	150	3	2	5

In this group teachers No. 1 and 8 were in the shop, teachers No. 2 and 7 were in the commercial department, and teachers No. 3, 4, 5, and 6 taught academic subjects. The mental hygiene scores from the teachers' ballots by these eight teachers are included in the data for the "regular group" of teachers. Table 7 shows the mental hygiene scores for the eight teachers obtained from their own teachers' ballots, together with the mean scores and standard deviations obtained from the students' ballots.

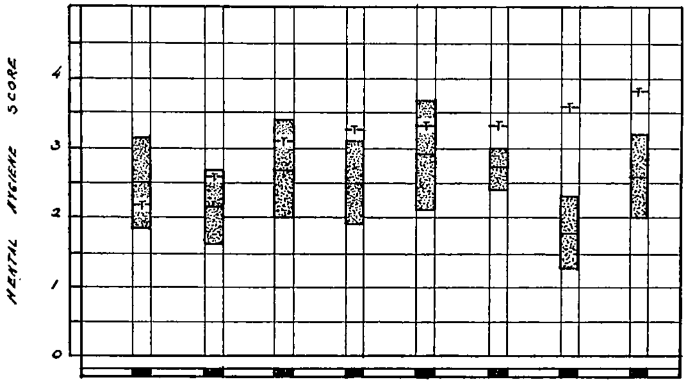
TABLE 7

Teacher	*Score: teacher's ballot*	*Range of scores student's ballot*	*Mean score: student's ballot*	*S.D. student's ballot*	*Number of students*
4	3.8	1.5–3.6	2.6	.6	12
1	3.6	1.1–3.3	1.8	.5	42
5	3.3	1.8–4.9	2.9	.8	12
8	3.3	2.2–3.0	2.7	.3	5
7	3.2	1.8–4.1	2.5	.6	24
3	3.1	1.6–4.5	2.7	.7	33
2	2.6	1.4–3.9	2.2	.5	31
6	2.2	1.4–3.8	2.5	.7	23

The mean score of 3.1 for these eight teachers obtained from the teachers' ballots is identical with the mean for 130 teachers. The standard deviation of 1.8

of the eight teachers from their own mean is three times the standard deviation of .6 for the 130 teachers.

A graphic comparison of the teachers' ballot mental hygiene scores with the mean mental hygiene scores assigned the same teachers from the students' ballots is shown in Figure 2, which also gives the standard deviation of the mean scores from the students' ballots, together with the number of students who marked ballots respectively for each of the eight teachers. The data represented in Figure 2 are presented in rank order of mental hygiene scores obtained from the teachers' ballots.



Teacher	6	2	3	7	5	8	1	4
Teacher's Score	2.2	2.6	3.1	3.2	3.3	3.3	3.6	3.8
Student's Score	2.5	2.2	2.7	2.5	2.9	2.7	1.8	2.6
Student's S.D.	.7	.5	.7	.6	.8	.3	.5	.6
Number of Students	23	31	33	24	12	5	42	12

FIGURE 2. Mean mental hygiene scores of eight teachers obtained from students' ballots, standard deviations of the mean scores, together with numbers of students, and mental hygiene scores from the teachers' self-marked ballots, arranged in rank order of scores from the teachers' ballots.

Of the eight teachers four had their own scores within one standard deviation of the mean of the students' scores, four had their own scores more than one standard deviation above the students' mean score. Teacher No. 1, a man with no academic degree but with twenty-two years of teaching experience, received for the techniques he reported for himself a mental hygiene score that was 3.6 standard deviations above the mean score obtained from forty-two students' ballots.

It may be proposed hypothetically here that the reports of a large number of students as to what a teacher would do in a problem situation would have more validity than the report of the teacher himself. Especially should this be so where there is a high agreement among students as shown by a low standard deviation.

Where, however, there is disagreement between the teacher's own mental hygiene score and the score obtained from the students' ballots, the teacher's report may be assumed to be of questionable validity. Especially would this be so if the students reporting for this teacher showed a high agreement as represented in a low standard deviation from their own mean score. In Figure 2, teacher No. 1 offers such an example. He drew the highest number of students among the eight teachers on the list. The students had both a low standard deviation and a low mean score for this teacher. Their ballots showed a high degree of agreement that the techniques used by him in problem situations were techniques of attack, techniques that tended to increase conflict and tension between the student and his environment. The teacher himself, however, from the descriptions of his behavior on his own teacher's ballot, secured a mental hygiene score which, although 3.6 standard deviations above the students' mean, was barely above the midpoint of the mental hygiene scale.

Teacher No. 3 was a woman with a B.A. degree and twenty-five years of teaching experience. She taught academic courses. The students' ballots showed a fairly low standard deviation and a mental hygiene score of 2.7. The teacher's own ballot gave her a mental hygiene score of 3.1, which, according to the students' standard deviation, was in fair agreement with the students. These measures indicate that the teacher herself and the students have agreed that the techniques which she used in problem situations tended to be unrelated to the problem or to intensify rather than reduce the conflict between the student and his environment.

Teacher No. 2, a woman with a B.A degree and twelve years of teaching experience, taught in the commerce department. Thirty-one students marked ballots for her, with a low standard deviation of their mental hygiene scores. The agreement among the students was shared by the teacher herself, whose own score fell within one standard deviation of the students' mean score for her. Compared with teacher No. 3, both the teacher's ballot and the students' ballots place this teacher's mental hygiene scores respectively below the scores of teacher No. 3.

For teachers 4, 5, and 8, the numbers of students were small. None of the twelve students marking ballots for teacher No. 4 gave her as high a mental hygiene score as the teacher's own ballot, which obtained a mental hygiene score of 3.8.

Comparison of scores obtained from students' ballots according to division group department, and sex of the students. An attempt was made to discover whether there might be tendencies in this group of 182 students for such factors as division group, department, or sex to affect the mental hygiene scores which were derived from the students' ballots. With the greatest number of students balloting on any one teacher being forty-two, it is obvious that differences between mean scores of various groups of students would need to be very pronounced in order to be revealed by these small numbers of cases.

Division groups. Each student had been classified by the school according to his standing on tests taken at entrance and assigned to one of the three division groups which were designated as A-B, C, C-D. Data for only three teachers can be compared for division group means. Table 8 shows the number of students in each division group who balloted on these three teachers. It is obvious that there was no linear relation between division group and teacher's mental hygiene score. The only tendency possible was for the ballots of C group students to yield higher scores than the ballots for the group above or the group below.

TABLE 8

Students by Division Groups Balloting on Three Teachers

Division	*Teacher No. 1*		*Teacher No. 3*		*Teacher No. 7*	
	N	*Mean*	*N*	*Mean*	*N*	*Mean*
A–B	15	1.7	14	2.5	2	2.0
C	6	2.2	18	2.8	10	2.8
C–D	21	1.8	1	—	12	2.3
Totals	42		33		24	

The Fisher (3) method for comparing mean scores that are based on small numbers was used. By this method if *P* is greater than .05, there is no probability of a difference not due to chance factors. For teacher No. 1 the comparison of the A-B with the C-D students yielded a *P* that fell between .3 and .4. It is certain that the small difference between the mean scores of these groups is not significant.

For teacher No. 3 the comparison between A-B and C groups was made. For this comparison *P* fell between .1 and .2, again indicating no significant difference.

For teacher No. 7 the C group ballots yielded a mean mental hygiene score .5 greater than the mean score obtained from the ballots for the C-D students. This difference may be regarded as significant; *P* fell between .02 and .05.

Department. The Fisher method was used also in comparing the mean score of eleven college preparatory students with the mean score of thirteen commerce students who marked ballots for teacher No. 7. The difference of .2 was very small and not significant; *P* fell between .4 and .5.

Sex differences in students. The mean score of twelve boys was compared with the mean score for twenty-one girls who balloted on teacher No. 3. The mean scores were 2.6 for boys and 2.7 for girls, respectively, and were not significantly different. For teacher No. 2, thirteen boys had a mean score of 2.0 and eighteen girls had a mean score of 2.3. *P* fell between .05 and .1, indicating that the difference between the means in this case also was not significant.

Comparison of mental hygiene scores of students' ballots with scores on the Bernreuter Personality Inventory. Inventories were marked by eighty-three students. The raw scores were translated into percentile ranks for comparison with the Bernreuter norms. The means and standard deviations used were those supplied by Bernreuter. No student in either sex group was found by any of the scoring methods to be below one standard deviation of the mean.

For Self-Sufficiency, exactly two-thirds of the boys had scores within one standard deviation of the mean and one-third had scores above one standard deviation. All the girls except one had scores between one and two standard deviations above the mean.

For Dominance-Submission, all the boys and fifteen of the thirty-eight girls fell within one S.D. of the mean. Twenty-three girls received scores between one and two S.D.'s above the mean.

On the Neurotic scoring, all the boys and all but four of the girls were between one and two S.D.'s above the mean. The four other girls were within one S.D. None fell in the upper range needing special attention.

According to the Introversion-Extraversion scores, high scores indicate a tendency to be introverted. All of the boys and girls were over one S.D. above the mean. Eleven boys and four girls were found above the ninety-eighth percentile, in the range of those needing expert attention. An examination of the mental hygiene scores of these fifteen boys and girls showed no tendency whatever for their students' ballots to yield scores different from the scores obtained from the ballots of their companions.

No relationship was found to exist between any of the scores of the Bernreuter Personality Inventory and the mental hygiene scores obtained from the students' ballots.

SUMMARY

This study is an investigation of the techniques which teachers use in responding to twenty-three problem situations as reported by teachers and students. Reports of teachers' techniques were made on specially devised Teachers' Ballots and Students' Ballots. Mental hygiene values which were assigned to each technique were obtained from another investigation.

Data were obtained from 130 high school teachers who marked the teachers' ballots and from 182 high school freshmen who marked the students' ballots. Fifty-three of the 130 teachers marked a second teacher's ballot from which a reliability coefficient of .81 was obtained. One hundred of the 182 students marked a second student's ballot, from which a coefficient of reliability of .67 was obtained. Eighty-three students marked, in addition, the Bernreuter Personality Inventory. Each student's ballot reported on the techniques of one teacher whom the student selected from a list of eight teachers.

The mental hygiene scores for 130 teachers formed a highly symmetrical distribution on the seven-point scale, with the mean and mode at 3.1.

Forty teachers with master's degrees had significantly higher mental hygiene scores than seventy-seven teachers with B.A. degrees, or than eleven teachers with no degree. Virtually significant differences in mental hygiene scores were found between seventy-eight teachers of academic subjects and thirty-six teachers of industrial arts; the teachers of academic subjects having the higher mental hygiene scores. No sex differences between fifty men and eighty women teachers were found. A negative correlation of $-.21$ between mental hygiene scores and years of teaching experience indicated that a greater number of years of experience did not tend to raise the mental hygiene scores.

Mean mental hygiene scores for 130 teachers were computed for each of the twenty-three problem situations. Comparison was made between these scores and the rank order of seriousness of identical or comparable problems reported by 511 teachers to Wickman from a list of fifty problems. A rather consistent negative relationship was found between the mental hygiene scores and the rank order of seriousness. Those problems ranked as most serious in Wickman's study had the lowest mental hygiene scores, that is, they were dealt with by the teachers in this study by techniques which tended to intensify the difficulty, not reduce it. Those problems most serious in the rank order of seriousness were near the midpoint of the distribution of mental hygiene scores for these 130 teachers, that is, the teachers used techniques unrelated to the problems. Those problems regarded by the teachers in the Wickman report as least serious had the highest mental hygiene scores. "Shyness," which was fiftieth in rank order of seriousness among fifty problems, had the highest mental hygiene score.

The 182 student ballots were each marked for one of eight teachers. Four teachers had their own scores within one standard deviation of the mean score for the student ballots, and four teacher's ballot scores were more than one standard deviation above the mean for the student ballots.

No sex differences between boys and girls were found in the mental hygiene scores for the student ballots. The percentile scores of students who marked the Bernreuter Personality Inventory were unrelated to the mental hygiene scores on the student ballots.

Within the meaning of the mental hygiene scale for teachers, this study shows, both by the teachers' reports for themselves and by the students' reports of the teachers' techniques, that in general in dealing with these twenty-three problem situations the teachers would either defeat their own purposes by making the problem worse, or they would use techniques unrelated to the problem.

REFERENCES

1. ANDERSON, HAROLD H. *The Construction of a Mental Hygiene Scale for Teachers.* AM. J. ORTHOPSYCHIATRY, 10, 2, 1940, pp. 253–263.

2. COX, GRACE BELDEN. *A Study of Teachers' Responses to Problem Situations in School as Reported by Teachers and by Students.* Urbana, Illinois, University of Illinois Library. Masther's thesis, 1939, p. 65.

3. FISHER, R. A. *Statistical Methods for Research Workers.* Oliver and Boyd, London, Fifth edition, p. 120.

4. WICKMAN, E. K. *Children's Behavior and Teachers' Attitudes.* Commonwealth Fund, New York, 1928, p. 247.